A Survey of Natural Resource Professionals on Threats to Water Resources on California Rangelands

A Statewide Workshop Series

Executive Summary - Final Report to California Department of Forestry and Fire Protection

PROJECT TEAM

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I. BACKGROUND

The Range Management Advisory Committee (RMAC) to the California Board of Forestry has raised concerns that significant variability exists in the recommendations made to land managers by natural resources professionals relative to water resources impairment on rangelands. Specifically, the concern is that managers are receiving conflicting advice and opinions about the priority, cause and remedy of sources of water resources impairment on their properties.

Inherently, each natural resources professional brings a unique mix of training, experience, background, and agency perspective to an on-site assessment. This can potentially lead to a wide range of professional opinion. The most appropriate assessment for a specific site is the synthesis of multiple professional opinions ranging across discipline and agency lines.

However, variability in professional opinion can become a problem when a landowner receives conflicting recommendations from various agencies and even from staff within one agency. This does not facilitate resolution of site specific concerns, or protection of water resources.

Collectively, natural resources professionals have significant knowledge and experience about how to assist landowners interested in identifying, prioritizing and fixing specific problems. There is a wealth of knowledge within the ranks of these professionals about how to provide landowners with the information they need in a manner that will facilitate proactive and effective action. It is of value to; 1) capture the composite opinion of natural resources professionals relative to common range management practices, 2) determine how much variability in opinion actually exists between professionals, and 3) determine if this variability can be attributed to discipline, employer, experience, or other professional demographics. This information can be well utilized in ranch water quality short courses, professional continuing education, and cross agency and discipline training efforts. At the request of RMAC, with funding from California Department of Forestry and Fire Protection, and with assistance from numerous State and Federal natural resources agencies this project team developed a State-wide workshop series with the following objectives.

II. WORKSHOP OBJECTIVES

Facilitate on-the-ground discussion among natural resources professionals about the cause, priority, remedy, and approach to achieve the timely correction of typical sources of water resources impairments found on California's rangelands. Provide an on-the-ground opportunity for exchange of professional opinion, training, experience, ideas, successes, and failures relative to tangible, specific, real world problems.

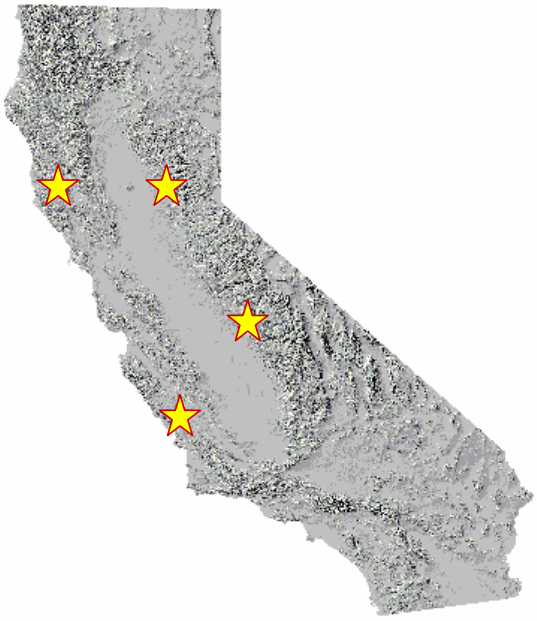
Quantify similarities, variability and pattern in professional opinion found across professionals about the cause, priority, remedy and approach to achieve the timely correction of typical sources of water resources impairments found on California's rangelands. Provide a synthesis opinion of common water resources threats on California's rangelands, representing the input of natural resources professionals across discipline and agency lines. Provide information to target educational opportunities.

III. TARGET AUDIENCE

Local and regional professionals who work with landowners to protect rangeland water resources. These include regulators, educators, consultants, and natural resource management agency staff. These are the individuals who have the opportunity to facilitate the proactive on-the-ground implementation of water resources protection practices by landowners.

IV. WORKSHOP LOCATIONS

One workshop was held at each of four locations across California. Workshops were held at the UC Hopland Research and Extension Center (HREC), the UC Sierra Foothill Research and Extension Center (SFREC), the USFS San Joaquin Experimental Range (SJER), and the Esquela Ranch owned and operated by CSU San Luis Obispo (SLO). HREC, SFREC, SJER, and SLO workshop locations are located on oak woodland – annual grasslands in Mendocino, Yuba, Madera, and San Luis Obispo Counties, respectively. These four sites provide an excellent representation of the soil, climate, topographic, and range management practices typical of this and other rangeland types.



V. WORKSHOP FORMAT AND METHODS

FORMAT

Each workshop was a 1 day event, and the same format was followed at all 4 workshops. Workshops were conducted during the middle of the 2001-02 wet season (Jan through Feb of 2002). Six to seven sites were pre-selected at each location prior to the workshop date. Sites were selected to represent the range of common management related threats to water resources found on California's rangelands. Sites include erosion features (road culverts, stream crossings, etc.) nutrient/pathogen loading features (corrals, holding pastures, water troughs, etc.), riparian areas (riparian grazing, water gaps, etc.) (Table 1). All sites were visited by the workshop participants as a single group, lead and facilitated by members of the project team.

Table 1. Potential threats to water resources evaluated at each workshop. Site number represents the order in which each potential threat / site was visited during each workshop. All potential threats were not available / included in each workshop.

	Site Number			
Potential Threat	HREC		SJER	SLO
Corral System	--	2	1	4
Livestock Concentration Site	6	5	6	--
Manure Stockpile	2	--	--	--
Livestock Alley – Lane	--	3	2	--
Livestock Drinking Water Gap	--	7	--	--
Seasonal Stream Crossing	1	1	4	5
Road Culvert – Drainage System	4	6	--	1, 2
Grazing in Riparian Pasture	3	4	3	3
Headcut – Gully	--	--	5	6
Large Erosion Feature	5	--	--	--

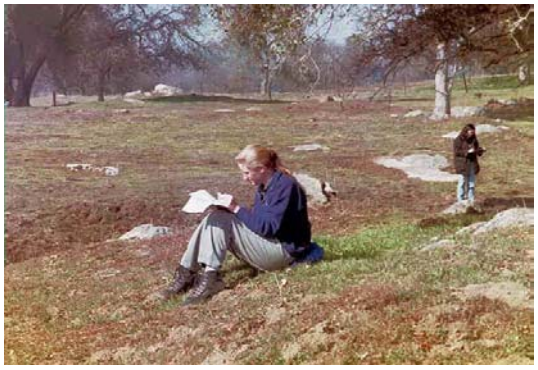
At the start of each workshop, the group was assembled and the overall objectives and format of the workshop was explained. The following ground rules were established: 1) there are no correct or incorrect answers at each site or to any question, only opinions, 2) speak freely, 3) listen to others, and 4) respect each others point of view. The confidentiality of all information gathered from each participant was assured, and the importance of completing the participant survey and site evaluation forms was stressed to the participants.

PARTICIPANT SURVEY

Each participant was asked to complete a participant survey (Appendix I). This survey provides us with professional demographic information (field of study, experience, job responsibilities, etc.) allowing us to characterize the participant pool, as well as to examine possible trends in opinion related to discipline, experience, employer, etc.

SITE EVALUATIONS

At each site, the group was given a very brief introduction to the site. The type and importance of the specific management practice at each site was explained by the local land manager. Each participant was then asked to evaluate the site by completing the site evaluation survey (Appendix II). These evaluations were conducted in confidence, with no group interactions allowed. Participants were given ~20 minutes per site to complete the site evaluation.

Once evaluations had been collected a group discussion of the site was lead by the workshop facilitator to allow an exchange of opinions concerning the site among the participants. These discussions were an extremely effective portion of the workshop,

giving participants a chance to hear first hand how their colleagues in other disciplines and agencies viewed potential water quality threats. While variability in professional opinion became evident in these discussions, the similarities were also clear.

VI. SUMMARY

This project served as a forum for dozens of site specific discussions between natural resources professionals about specific range management and water resources interactions. A massive dataset was collected and analyzed, revealing professional opinions on the priority, cause, and remedy of common water resources impairments on California rangelands. The results of this project will be integrated into the UCCE-NRCS Ranch Water Quality Planning Short Course and other extension education venues for landowners and managers. These results will also be incorporated into continuing education venues conducted by UCCE, NRCS, and other agencies. Finally, these results will be published in appropriate natural resources journals.

In general we learned the following:

1. There is relatively strong agreement among natural resources professionals about what does and does not constitute a threat to water resources on rangelands. The strongest agreement is over sites such as culverts and corrals, and the weakest agreement is over sites such as seasonal stream crossings.
2. There is relatively strong agreement that the threat posed by these common range management practices is low to moderate at the sub-basin scale. There is a small component of the profession (<3%) who feel strongly that these practices constitute an extreme threat to water resources.
3. There is relatively strong agreement that management changes can be made to mitigate these threats, allowing the management activity to continue.
4. The variation in professional opinion can be in part attributed to professional demographics. However, these relationships can change from one site type to another. This was particularly true for the demographic of current employer.
5. Educational background was the strongest predictor of how a participant would evaluate a particular site's threat to water resources and the potential to mitigate that threat. Basically, participants with natural resources protection educational degrees were more likely to feel a practice was a threat, and less likely to feel that the threat could be mitigated with improved management.
6. Whether or not a participant works directly with landowners or not appears to have very little impact on his/her opinion about cause, priority, or remedy.
7. There is clearly a lot of potential to reduce the variability in professional opinion on these issues by continued efforts to facilitate cross discipline and cross agency training. The field is the best forum for this training and dialogue.
8. Reducing variability will not come from changing the opinion of one group to match that of another, rather from each group modifying the opinions of the other.
9. While the majority of the profession is in relatively close agreement, there exists within the profession a small percentage of people who have very different, and strongly held opinions.
10. In general, natural resources professionals need a better understanding of common ranch management practices and best management practices to mitigate water

quality threats on rangelands. Particularly best management practices which are economically and logistically feasible for landowners.

VII. ACKNOWLEDGEMENTS

The project team would like to express its appreciation to each of the workshop participants. We'd also like to thank the superintendents and management staff at each of the workshop locations. Their willingness to host the workshops and participate in discussions about their own water resources problems clearly shows their dedication and leadership as land managers.